AFSC HISTORICAL
PUBLICATION SERIES
62 - 11 - 1

UNITED STATES AIR FORCE

* * *

History of Air Force Systems Command

1 JULY - 31 DECEMBER 1962

VOLUME I

COPY NO. 4

SCEH 64-308

88-0590 - AIR - 016

Chapter 2

THE CUBAN CRISIS

In only one respect--and that one a matter of degree--did the second half of 1962 differ from other comparable Cold War periods. World events reflected the familiar mixture of hope, tension, and watchful wariness, but the implications of a head-on encounter between the United States and Russia continually overshadowed the individual happenings which made up the pattern of local, national, and international affairs.[1]

Events in this period altered the situations of several states and territories. In Africa, Rwanda and Burundi were no longer Belgian trust territories after 1 July, and two days later France officially acknowledged the independence of Algeria. New members joined the British Commonwealth--Jamaica on 6 August, Trinidad and Tobago on 31 August, Uganda on 9 October, and Tanganyika on 9 December. A 13-nation declaration on 23 July supported a theoretical neutrality for Laos, and on 7 October American military advisers there completed their withdrawal from the country. On 15 August the Netherlands and Indonesia signed an agreement which might settle their dispute over possession of West New Guinea, where the United Nations established a temporary executive authority on 1 October. And Ethiopia absorbed Eritrea, making it a province on 14 November, though this was probably not the last word on the subject.

There were two unsuccessful assassination attempts--on Kwame Khrumah of Ghana (1 August) and on Charles de Gaulle (22 August), and on 3 September the recalcitrant government of Katanga accepted a United Nations plan for Congo reunification. There was an unusual

peaceful replacement of the government in Syria on 13 September and a violent uprooting of the Imam's government in Yemen on 27 September. In the United Kingdom on 22 October, one William Vassall received an 18-year prison sentence for violation of the British Official Secrets Act, and on 20 December the first free elections in many years made Juan Bosch president of the Dominican Republic.

The international competition in space continued, with impressive achievements on both sides. Starting 11 August, the Russians put up separately two cosmonauts, who were reportedly returned on 15 August after flights of 64 and 48 orbits. An American, Commander W. M. Schirra, made a more modest, six-orbit flight on 3 October, but his voyage was conducted--from launch to recovery--in the full spotlight of public coverage. Meanwhile, an even more striking triumph for American technology was under way. Launched by an Atlas-Agena booster on 27 August, the Mariner II vehicle set out for the planet Venus. After a space voyage of over three months, this probe established contact with its target on 14 December, sending back Earth's first sensory measurements of the atmosphere and environment of Venus.

Certain nations and peoples had other special preoccupations which enlisted the concern, the energies, or the resources of others around the world. Not too surprisingly, the French were wrapped up in an internal political discussion which was partly settled on 28 October when the voters endorsed de Gaulle in a referendum on the selection of future French presidents. More immediately disastrous was the 1 September earthquake in Iran which killed more than 11,000 people. Deteriorating relations between India and Communist China also attracted serious attention:

Chinese troops on 8 September crossed the newly controversial McMahon Line and, on 20 October, launched a major offensive against Indian outposts in the Himalayas; after initial Indian reverses, the United States on 3 November began flying needed small arms to the reeling Indian Army. Starkly highlighting a major internal concern for the United States was the 30 September rioting (and two deaths) in Oxford, Mississippi. West Germany was both bemused and aroused by the uproar over items published in Der Spiegel; starting about 10 October, this affair was still causing governmental repercussions in Bonn a month and more later. National preoccupations aside, Roman Catholics and other Christians everywhere had a special interest in the Second Ecumenical Council, convened in Rome by Pope John XXIII on 11 October; the first session of this Vatican assembly adjourned on 8 December.

Some of these major events in the period leading into October 1962 were tangentially related to the Cold War. The Laotian compromise was certainly a tactical victory for Communism, and the West German bickering had overtones of espionage. More potentially critical were the space race and the actual conflict on India's borders--the former had military implications largely sensed but still imperfectly defined and the latter might embroil the friends of both participants.

The Communist reputation for sensitive political timing acquired considerable tarnish on 30 October, when the perennial proposal to admit Red China came up for a United Nations vote and was defeated. In a related sense, too, no conceivable delicacy could have eased the jolt received by the British in the 18-21 December Nassau meeting when the United States offered the Polaris missile instead of the developmental Skybolt (GAM-87) air-launched ballistic missile.

Nuclear testing furnished an appropriately ominous backdrop for the international scene. Featuring a 30-megaton blast in the Arctic, the Russians conducted a new atmospheric test series which ran from 5 August to 20 November. The Americans were also testing in the atmosphere, and on 4 November President John F. Kennedy announced completion of a test series, just ahead of a 5 November United Nations resolution against all nuclear weapons testing.

On any "temperature" gauge, Cold War tensions ran consistently above normal, fluctuating with Communist pushes and relaxations at a score of known trouble spots around the world. As the principal antagonists carefully watched for each other's next move, only a slight increase in intensity and a focus of action at one geographical point sufficed to create a burning "hot spot" in the international pattern.

In the late summer and early fall of 1962, then, the focus of international tension came to rest upon the island of Cuba, an especially sensitive point because of its geographic proximity to the continental United States. Known since 1947 or earlier as the entry port for Communist infiltration into Latin America, Cuba by mid-1962 was firmly in the hands of Fidel Castro, who had publicly announced and demonstrated his Communist sympathies, dedication, and objectives.

The Cuban crisis appeared to many to take shape almost overnight, though this was not quite true. There actually were a fair number of indications and warnings, especially in August, September, and early October. Beyond the public view in the "classified" realm, of course, there were even more solidly founded reasons for suspicion.

As the chain of events gradually clarified Soviet actions in Cuba, American officials took an increasingly serious view of the situation. The key element, perhaps, was evidence that the Russian effort 90 miles from American shores went considerably beyond the activities historically necessary to shore up a new Communist satellite, no matter how feeble. Ultimately, it became clear that the Soviet-Cuban threat included a strong potential for offensive action against the United States.

Indirect and spasmodic, American relations with Castro's Cuba were irritating and frustrating, especially after the abortive 1961 Bay of Pigs invasion. In mid-1962 the tempo of events quickened at least as early as 24 August, with the revelation that Russia was sending as many as 5,000 "technicians," mostly military men, to Cuba. On 30 August Cuban boats fired on an American plane, and the following day President Kennedy warned that the fire would be returned if the offense were repeated.

Knowing that Cuba had conventional Russian weapons and seeing clearly the probable increase in Cuban efforts to export revolution and Communism into Latin America, the United States on 4 September warned Cuba against using its Soviet-origin weapons for aggressive purposes. Three days later President Kennedy asked the Congress for standby powers to recall up to 150,000 American Reservists, a request with greatest significance as a public indication that the Cuban situation might shortly become critical.

The trend toward crisis received additional impetus from the 25 September news that Russia was to build a $12-million Cuban base for Soviet fishing boats; other possible uses for such a base were readily apparent to American observers. On 3 October the

United States effectively barred its ports to all ships carrying contraband cargoes destined for Cuba, and within two weeks thereafter the fundamental cause of American concern became apparent.

For four weeks in late September and early October, hurricane winds and a persistent cloud cover combined to make aerial reconnaissance over Cuba a spotty and inconclusive affair. By 14 October, however, the high-flying U-2 aircraft were able to bring back good photographs of unusual construction work on the island. Careful interpretation of these prints confirmed rumors and suspicions, identifying the scars in the earth as missile sites in varying stages of completion. The word to the President on 16 October was that these emplacements were probably for ballistic weapons which could drop nuclear warheads onto American soil with very little warning. This solid identification was, of course, at variance with the assurances Andrei Gromyko gave President Kennedy at the White House on 18 October when the Russian diplomat blandly insisted that the missiles in question were not offensive weapons.

The United States moved cautiously but firmly. In a 22 October broadcast the President announced "unmistakable evidence" that "a series of offensive missile sites" was being built in Cuba; their purpose could be "none other than to provide a nuclear strike capability against the Western Hemisphere." In the name of national security, the President ordered a "strict quarantine on all offensive military equipment under shipment to Cuba." He also served notice that any nuclear missile launched from Cuba against any Western Hemisphere nation would be regarded as a Russian attack upon the United States, "requiring a full retaliatory response upon the Soviet Union."

The Organization of American States the next day voted unanimous support for the American position, the same day that Castro announced his refusal to permit a United Nations investigating committee to conduct an on-site examination of the "defensive" missile complex.

When it became apparent that a number of Cuba-bound ships would refuse to heed the warning and change course, the American quarantine went into effect on 24 October. Two days later the United States Navy for the first time halted and searched one of these inbound vessels; when its cargo revealed no offensive military materials, the chartered ship was allowed to proceed.

At least as early as 26 October, Russian Premier Khrushchev initiated some significant correspondence with President Kennedy. In a 27 October note, the Soviet leader offered a trade--withdrawal of his offensive weapons from Cuba for withdrawal of American intermediate range ballistic missiles from Turkey. President Kennedy rejected the Turkish portion of the bargain as having nothing to do with the Cuban issue, but suggested that the remainder of the Russian proposal could serve as an acceptable quid pro quo for ending the American naval quarantine of Cuba. The following day Khrushchev offered withdrawal from Cuba for an American promise not to invade the island.

This continuing Kennedy-Khrushchev contact and the apparent Russian willingness to negotiate a settlement comprised probably the strongest single factor in alleviating the Cuban crisis, and the swift marshaling of American striking power certainly had something to do with the cooling of Cuban emotions. United Nations Secretary General U Thant's flying visit to Castro, 30-31 October, achieved no useful results but did give further indication that discussion and negotiation were possible.[2]

Tensions remained high for some time, however, because one provocative deed--whether accidental or fanatical--might still have sparked a conflagration. This was true even on 2 November, when President Kennedy announced reconnaissance evidence that dismantling of the offensive sites had begun. The arrival of Anastas Mikoyan in Havana on 3 November had the effect of placing a Russian hand on the Cuban helm for the next 23 days, a critical time when dismantling went on and other points at issue (the American demand for on-site inspection, for example, and the presence of Ilyushin-28 jet bombers in Cuba) were worked out.

From a near-boil the Cuban crisis gradually returned to a simmer. On 20 November Khrushchev announced he would withdraw the controversial Russian jet bombers from Cuba, and President Kennedy responded that this would end the need for the American naval quarantine. That same day, Russia signed a new three-year treaty for economic aid to Cuba. It was mid-December before the American Government was publicly satisfied with the removal of offensive Russian missiles and jet bombers from Cuba.

Cuban-American tensions reverted to a "normal" level. Regular reconnaissance showed no sign of the offensive weapons, but there was no real firsthand proof of their removal. American surveillance continued, accompanied by a gradual, partial relaxation of the special military buildup in the United States. Perhaps the clearest signal that Cuba and the Communists were on a new tack was Fidel Castro's 24 December agreement to release the 1,113 prisoners captured at the Bay of Pigs, though the Cuban dictator's terms made it obvious even to the most optimistic that this was no thoroughgoing "thaw" in the Cold War.

This background sketch of international events during the "Cuban crisis" serves two main purposes. First, it puts the period

of acute tension in perspective. Peoples and nations did not set aside their other preoccupations, though they did hold their breath for a momentary focus of attention on the dangers inherent in the Cuban situation. Moreover, neither the crisis nor its outcome effected any great change in the course of other events--the Berlin situation, for example, remained essentially the same.

On the other hand, the American political and military reaction to the Cuba-based threat must have been instructive to Communist leaders everywhere. Almost overnight the United States assumed a "ready" posture, publicly called a halt to specific Russian activities, and prepared for either a full showdown with Communism or the chastisement of Cuba.

The American military response was emphatic. In the potential Cuban "theater," the United States Navy conducted the physical quarantine of the island and performed aerial surveillance of missile sites and Cuban shipping. The Army swiftly moved appropriate offensive and defensive forces into position. Air Force combat units flew critical reconnaissance missions and stood ready to deliver either pinpoint attacks on missile sites or massive blows against major targets, in Cuba or in Russia.

Three major considerations--geography, strategy, and technology--combined to give the Air Force Systems Command a vital role in Air Force operations during this crisis. Almost literally, this role substantiated the earlier assertion of General Bernard A. Schriever that his research and development organization was in the front line of the Cold War, though the General's remarks had actually described the scientist's and engineer's contributions to the international struggle for technological suprema-

Geographically, Cuba lay just off the main track of the Atlantic Missile Range and within reach of the installations at Eglin Air Force Base and at Cape Canaveral; both these became staging areas and, in effect, forward tactical airfields. The broad strategic implications of the crisis also made it imperative to have the maximum number of intercontinental ballistic missiles ready for launch; to augment those already operational, training complexes and several sites still under construction were quickly brought to an emergency operational status. Finally, the technological aspects of modern warfare made the Systems Command an active partner in the operation; accelerated development work, urgent test programs, and on-the-spot improvements in operational equipment were among the contributions.

The total Air Force Systems Command performance went far beyond routine combat support and contradicted the old notion that research and development came to an almost complete halt during actual operations. Systems Command personnel participated actively in the tactical and strategic military effort; they also pushed forward the scheduled Air Force systems acquisition program and accelerated certain high-priority projects. All in all, the Systems Command could honestly evaluate its operation in the Cuban crisis as "effective beyond expectation."[4]

A Useful Preamble

As preparation for the reality of combat operations, military training seeks to simulate as nearly as possible all aspects of the ultimate event itself. One critical element is the operational and logistical control of forces and resources in military emergencies.[5]

In this sense, the acute tensions of October 1962 found the Air Force and its Systems Command wielding a recently honed blade, for the Cuban crisis blossomed immediately on the heels of two extensive command post exercises.

The Joint Chiefs of Staff directed the first of these practice projects; called

In the process, the major commands' war plans received a good workout, and the effort included realistic practice runs on combat and combat support actions.

HIGH HEELS II, which began on 8 September 1962, postulated an attack on the United States, the impact thereof, and the Air Force reaction to this blow. While this chain of events was being played out, the subsequent exercise--identified as SPADE FORK--began on 15 September.

SPADE FORK posed for agencies throughout the Department of Defense the logistical problems connected with operations in the wake of an attack, with special emphasis on the ability to reconstitute effective logistical support. As an indication of SPADE FORK's scope, it is worth noting that the Air Force Systems Command had in operation 19 command posts, as well as 40 local offices of its Contract Management Regions; too, the Command logged and played a total of 79 incidents. Two general conclusions, drawn from the SPADE FORK experience, defined the Systems Command's most important initial contributions in an actual emergency: to provide resources--skilled personnel, materiel, and facilities--for the use of the combat commands, and to regain effective control of contractor production facilities, including information on their ability to support the national effort.

The obvious overlap between the two exercises actually enhanced their practical utility for Air Force training. The personnel manning command posts and alert staffs derived profitable experience in operational, administrative, and reporting procedures. The simulated emergency also gave participants a firsthand appreciation of the command and control difficulties stemming from communications disrupted by a nuclear attack.

Some mistakes were made and numerous lessons learned. Experience in the two exercises suggested several changes and improvements in current procedures. The Cuban crisis started so soon after the 28 September end of HIGH HEELS II/SPADE FORK, however, that there was no time to translate the indicated improvements into formal revisions of existing plans and directives. But the actual experience gained was invaluable when the real emergency came along, and the more important changes were introduced informally into operational procedures.[6]

Cuba and the Systems Command[7]

Acting in response to a Joint Chiefs of Staff directive conveyed through Air Force channels, all elements of the Air Force Systems Command increased their degree of readiness on 22 October 1962.

This move coincided with that evening's Presidential address, which informed the Nation of the serious situation in Cuba and revealed the accentuated alert status of United States military elements.[8]

In accordance with prescribed Systems Command procedures, on 22 October automatically activated the Commander's Alert Staff. The Director of Operations (Colonel H. C. Godman) briefed the Commander and key staff officers on the Command's war plans and on specific support requirements already imposed on Command elements at Patrick and Eglin Air Force Bases. The Deputy Chief of Staff/Foreign Technology (Major General H. E. Watson) presented a Top Secret intelligence briefing. Later that night General Schriever had all field commanders contacted to confirm their actions in increasing the local alert posture and in realigning their research and development missions in the face of the international crisis.[10]

The following morning, 23 October, General Schriever met again with his senior staff and canvassed actions under way, in order to marshal the Systems Command's full resources in appropriate response to the crisis.

The security program encompassed protection of key personnel, aircraft, missiles, and facilities, including a double check of contractor security measures. Also under consideration were such

possibilities as closing critical Systems Command installations to visitors, as well as the use of sentry dogs and seacoast patrols at the Pacific Missile Range and elsewhere.

Keeping the Command elements linked together was a basic requirement. The vulnerability of communications to sabotage, the availability of emergency power, and an alerting phone network for key officials were checklist items. In addition, all elements of the Command should gear themselves to extended maintenance of the 24-hour alert staff.

Assessment of the impact on personnel raised such questions as which reservists or 20-year retirees might be recalled as need arose, which Systems Command pilots might be drafted for flying jobs, and which civilian employees might be recalled as reservists. While reducing temporary duty (especially for key officers) to a minimum, the Command also prepared its plans for cancelling all leaves. Against the possibility that the situation might degenerate into declaration of a national emergency, legal advice went out reminding all commanders of their prerogatives and responsibilities.

A general operational survey covered the ability of Systems Command installations to support combat forces, including the presence of competent crews to fire missiles, if necessary, from the Atlantic and Pacific Missile Ranges.

Another operational consideration was designation of an alternate headquarters for the Systems Command, to confirm the provision for this contingency already embodied in the Command's continuity-of-operations plan.

A reappraisal of the entire systems acquisition program sought additional ways and means for the Systems Command to render the most constructive assistance possible. Among the items was quick identification of those test aircraft whose current configuration permitted their immediate release to operating commands. In addition, individual programs and projects appeared more or less relevant and urgent when viewed in the light of the international crisis.

The Systems Command again examined its program and separated the component parts into four alternative courses of action: advanced ideas susceptible of rapid translation into useful hardware; projects in being or equipment already on production lines for which an extra push meant expedited completion; longterm efforts which could be canceled to provide support for accelerated nearterm endeavors; and finally, those low-priority projects whose cancellation would also release additional resources.[11]

Also on 23 October Systems Command Headquarters relayed to its field organizations the Department of Defense guidelines on the handling of public information and the Air Force directive calling for a thorough documentation of the response to the Cuban crisis--the latter for both information and historical purposes. In addition, necessary communications facilities were installed and administrative procedures set in motion to insure effective operation of the Commander's Alert Staff.[12]

In addition to Patrick and Eglin Air Force Bases, other Systems Command installations felt the impact of the operational reaction. During the night of 23-24 October, for example, four

to Edwards Air Force Base, California. The Air Force Flight Test Center at Edwards undertook support of this strategic "task force" without any impairment of its other major functions.[13]

Systems Command

units brought 20

missiles to the desired state of readiness;

The

Strategic Air Command acquired temporary control over all 20 missiles, and this supplement added--at the peak of the crisis--71 megatons to the available nuclear striking force.

Indicative of the immediate technical advice which the Air Force received from its Systems Command was Brigadier General B. A. Strickland, Jr.'s 24 October message to the Pentagon. General Schriever's Assistant for Bioastronautics outlined for operational units the measures currently known to be useful in protecting aircrews against flashblindness caused by nuclear explosions. He recommended several protective expedients, the results of a continuing project designed to define and perfect a guaranteed protection against this sort of emergency.[15]

Following through on one of the previous day's considerations, the Systems Command reaffirmed a portion of its earlier continuity-of-operations plan and confirmed the Space Systems Division as its alternate headquarters, in the event the Andrews command post became inoperative or untenable.

Among the immediate operational impacts of the Cuban crisis was a scramble for aircraft of all types. As early as 22 October,

the Systems Command had had to fight off an Air Defense Command attempt to acquire three F-102 test bed aircraft in use at Griffiss Air Force Base. Another feature of this scramble was a levy for transport aircraft, a demand which hit the Systems Command's air support of the stations strung through the Caribbean and into the South Atlantic along the Atlantic Missile Range. The Missile Test Center assessed how effectively it could supply range stations with its own limited transport fleet, if the regular Military Air Transport Service airlifts of cargo and personnel were no longer available. (This was a reaction to a 23 October decision to withdraw scheduled airlift support from the Atlantic Missile Range. As things worked out, Patrick's resources were sufficient and there was no need to follow through on plans to deploy other Systems Command aircraft to the Missile Test Center.)

Illustrative of the varied priority requirements for support aircraft was an Air Force levy of 25 October which took three T-33's from the Systems Command and one U-3 each from the Headquarters and Logistics Commands, as well as three C-47's from the Strategic Air Command. The guideline for the crews and associated maintenance personnel was "TDY for indefinite period." That same day the Flight Test Center reported 10 of its aircraft were not immediately available, because of modifications, maintenance, or other mechanical conditions; all other test and test support aircraft under Edwards control were in commission. And the Special Weapons Center's

initial report indicated it could continue to support National Aeronautics and Space Administration programs, even if Military Air Transport Service and other airlift assistance were curtailed. There were also levies for trained personnel, illustrated by the alerting on 25 October of a 40-man Air Police unit at the Special Weapons Center; on 5 November this detachment was ordered to Homestead Air Force Base, Florida.[17]

Also on 25 October, General Schriever sent his field commanders a significant message. First, he called for a specific assurance that each element had achieved the required alert posture. Since the Systems Command's mission--as compared with that of a combat command--did not put the same premium on alerting procedures and war plans exercises, the General called for a special local review of "war emergency and disaster plans," of the local alert staff's status, and of antisabotage security measures. Local commanders were also to report on their capacity to furnish support demanded by or on behalf of operating commands. Second, local commanders were enjoined to inform General Schriever of any problems or recommendations affecting an adequate Systems Command response to the crisis.

Next, the message outlined in some detail specific considerations for local commanders, amplifying many of the criteria defined in the 23 October staff meeting. In addition to the standard precautions of security, for example, General Schriever directed special attention to the protection of key personnel, antisabotage measures (especially for aircraft based at civilian installations), facilities, communications, and equipment security (with special measures for ballistic missiles in transit and on site), the need for seacoast patrols or the use of sentry dogs, and tighter visitor

control procedures (including even more stringent "need to know" requirements). Among the requirements for local alerting procedures was the ability to recall all personnel during off-duty hours, if necessary. For the moment, Systems Command policy was to retain all test and test support aircraft, and a reduction of proficiency flying was under consideration. The installations at Patrick and Eglin had two special tasks--to protect their tests against "unfriendly ECM activity" and to plan against the possibility of moving their test operations to nearby civilian fields. Local program reviews should identify projects for accelerated completion, advanced ideas directly applicable to crisis needs, and low-priority efforts whose cancellation would provide resources for the more urgent expedited actions. Special personnel considerations included the application of "human reliability" standards to civilians with access to nuclear devices, and there were plans for curtailing leaves if the situation became more serious. Cargo should go by surface means wherever possible, and only critical, outsized items would be considered for airlift.

Finally, without dramatics but in a manner which underscored the chilling implications of a serious international crisis in the nuclear era, General Schriever said:[18]

> It is my desire that every commander personally see to the readiness of his command, and be prepared to exercise his capability to the utmost if the eventuality occurs that he must proceed on his own.

Such exercises as HIGH HEELS II and SPADE FORK had provided valuable practice in crisis control of the Systems Command and its important resources. Put into practice when the Cuban crisis broke, the lessons learned earlier enabled the command post

at Andrews to alert the Systems Command and provided "rapid responses for information." By 26 October the first urgent days of the emergency were past and such new lessons as a proper separation of crisis and routine messages could be applied to the system. As the operation went on, staff agencies in Command Headquarters reviewed their actions and procedures, with an eye to efficient functioning in a continuing emergency.[19]

By type, there were in this list 126 Atlases, 57 Titan I's, and 14 Minutemen. In addition, at least two more Minutemen and another Titan I were on the verge of Emergency War Operation status.[20]

The scramble for available aircraft continued to impinge upon the Systems Command's resources. In response to a Strategic Air Command request, Air Force Headquarters said on 26 October that it contemplated no blanket withdrawal of all B-52 and B-58 aircraft, but it did authorize the immediate transfer of five B-52H's and one B-58A to the Strategic Air Command. The ground rules for the transfer included: the aircraft must be capable of delivering bombs, test instrumentation would be left intact,

In reporting on the availability of its aircraft that same day, the Proving Ground Center at Eglin applied a priority for withdrawals. Thus, there were 17 test or test support aircraft available at once or within 10 days, and 13 other aircraft which could b

made ready for operational use in periods between 10 and 30 days. There were also 21 support aircraft and drones assigned to and instrumented for target work, and 21 aircraft assigned to test projects identified as "war essential." If any were to be taken, Eglin asked that they be withdrawn from the test program in the order listed.

Pertinent information continued to flow in from Systems Command field organizations. On 26 October the Missile Development Center at Holloman Air Force Base assessed its ability to support combat units and concluded that it could, "under austere conditions," accommodate one tactical fighter wing or a troop carrier wing equipped with either C-123 or C-130 aircraft.[21]

Still another Systems Command project checked out a special operational concept for possible Cuban requirements. The Flight Test Center on 26 October performed a series of tests to determine whether the sonic boom of low-flying aircraft would affect ballistic missile checkout equipment. (If it became necessary to deal with Russian missile sites in Cuba, this was one of several negation methods under consideration.) Unfortunately, the Edwards tests--supersonic passes over selected equipment sites--indicated that the possibility of knocking out the missile equipment or rendering it inoperative was "very remote."[23]

Reconnaissance had defined rather conclusively the composition of the Russian threat in Cuba--defensive weapons (interceptor missiles and aircraft) with an embryo force of offensive aircraft (Il-28 bombers which could be operational by mid-December 1962) and ballistic missiles (a current, October 1962, capability with 1,020-nautical-mile weapons and an operational capacity in November-December for others with ranges to 2,200 nautical miles). A Defense Intelligence Agency summary on 27 October added useful perspective to the situation and its origins, with the conclusion that the Russian strategic buildup "probably" started in the fall of 1961, that the offensive portion "was put in the motion" as early as the late spring of 1962, and that the rate of offensive-missile site construction tagged this as a priority project.[24]

To one degree or another, the entire Air Force Systems Command felt the impact of the crisis, but four of the field agencies were affected most sharply. Of these, the centers at Patrick and Eglin were physically on the firing line and thus became bases and staging areas for the combat forces, at the same time trying to maintain useful test schedules. The Ballistic Systems Division at Norton A.

Force Base, California, held field responsibility for the preparation and readiness of the greatest possible number of United States ballistic missiles, not so much against Cuba as against a possible inability to localize the Cuban confrontation. And the Electronic Systems Division at Hanscom Field, Massachusetts, guided the creation of the electronic systems on which modern military operations depended--whether for communications, command and control, surveillance and reconnaissance, or countermeasures.

On 27 October Major General L. I. Davis, Commander of the Air Force Missile Test Center, answered General Schriever's important message of the previous day. Patrick was ready for whatever might come, and General Davis could "foresee no difficulty at this time that we cannot take care of under current plans and preparations." He had been host to two Air Defense Command squadrons since 19 October, some Army troops had arrived and were being supported, and he expected at least 1,200 more Air Force personnel. Patrick was closed to the public, a shore patrol policed Cape Canaveral, a ship search radar (AN/FPS-8) was in 24-hour operation, and special liaison with the Navy was in effect. The test schedule would continue, with the prelaunch announcement policy changed so as to avoid international misunderstandings or "inadvertent action."

The Ballistic Systems Division response, also on 27 October, was equally reassuring. Between 24 and 27 October, 10 Minuteman missiles had been turned over to the Strategic Air Command and 7 Atlas-F weapons raised to Emergency Combat Capability status. Division Headquarters at Norton expected to have an emergency

power supply by 29 October; and all missiles and missile stages in surface transit had armed guards. A balance of priorities suggested that certain tests in support of the operational in support of the operational program were critically important; accordingly, one Minuteman was withdrawn from the operational list and returned to Systems Command control to continue this vital testing.[26]

By 28 October the Systems Command's support machinery was in high gear and--given the uncertainties of the crisis--functioning smoothly. A 90-day temporary duty loan sent 15 officers to the Tactical Air Command and 105 airmen to beef up supporting elements at forward bases in Florida. The Aeronautical Systems Division established a team to provide research and engineering assistance to the Tactical Air Command. And in response to an Air Force directive of 27 October, the Division dispatched a team of six aerial reconnaissance experts to MacDill Air Force Base, Florida, to effect an improvement in the photographic quality of data being acquired with RF-101 aircraft; some of the experts departed for Florida within 30 minutes after their Division received the order. The group completed its task and returned to Wright-Patterson Air Force Base by 3 November.

The Systems Command had responded at once to the 26 October directive and had identified five B-52H and one B-58A aircraft which could be transferred to the Strategic Air Command. By 28 October a review of the proffered bombers had determined that none were suitable for immediate use; accordingly, the Strategic Air Command withdrew its request.[27]

Brigadier General I. L. Branch, Commander of the Air Force Flight Test Center, assured General Schriever on 29 October that all indicated precautions were being taken at Edwards and that

support of the deployed B-47 unit was continuing.

The Missile Test Center situation report that same day noted that Patrick was now temporary host to some 114 Air Force and Army officers and 792 enlisted men. (By this time the Systems Command itself had at least 25 officers and 104 airmen on temporary duty supporting various organizations.) At Patrick there were also additional plans for emergency use of Cape Canaveral facilities, including the transformation of the Cape's skid strip into an operational runway.

By 30 October the Cuban crisis was still a serious thing, but it had lost its fine edge of stark tension. Though under thorough surveillance, the Russian missiles in Cuba were still in place, and across the Straits of Florida the American forces remained poised for whatever action might be needed. By this time, however, the

Kennedy-Khrushchev exchanges were in their fifth day and the ultimate outcome of the crisis had come to depend on diplomatic negotiations. There was no public announcement to this effect, but there were such indications of lessened pressure as the Systems Command's 30 October directive

and--in some cases--return of a site would permit a mission modification and a rapid achievement of permanent operational status.)

By 10 November, the Systems Command again owned all the missiles upgraded for the emergency.[30]

Too, the temporary population at Patrick was fluctuating by 31 October; 121 officers and 774 enlisted men were still present in transient status, though one Air Force unit of 10 officers and 124 airmen had departed. Temporary official visitors at Eglin at this time included 53 officers, 230 airmen, and some 770 Army personnel. A significant element in the Systems Command performance during the crisis was the ability of these centers and other units to support a semicombat condition and, at the same time, carry on their primary missions in research, development, testing, and evaluation.

An operational problem identified early was the danger of overruns by F-106 aircraft on Runway 20 at Patrick. Agreement

on a solution to protect the Air Defense Command vehicles came quickly, and by 31 October an MA-1/1A runway barrier was in place. The installation of a similar barrier on the Cape Canaveral skid strip was under consideration.[31]

Another indication that at least the first wave of critical tension had passed was the 31 October message in which General LeMay added to those of President Kennedy and Secretary Zuckert his compliments on the response of Air Force units to the crisis. The following day General Schriever sent Systems Command personnel his own "personal congratulations for your prompt response to the unusual demands placed upon you in these critical times." This response, the General added, "reaffirms my confidence that AFSC personnel can perform our vital mission now and in the future.

With no guarantee that the crisis was over, there could be no relaxation. Systems Command elements remained on the alert, supporting the operational units as required and pursuing their functional missions. The Missile Test Center's 1 November situation report counted 125 officers and 791 enlisted men in Air Force and Army units deployed to Patrick, as well as establishment of an improved backup communications connection with Andrews. To avoid misleading the missile warning network covering Cuba, the Center also arranged to notify the North American Air Defense Command of any planned Cape Canaveral test launches which would rise above 70,000 feet. Operating under similar pressure, Eglin received the first 3 of 10 refuelers to augment the local capacity for servicing transient aircraft. And in a financial footnote, the Western Contract Management Region estimated that 24-hour command post operation throughout the Re would require an additional $39,718.62 monthly.[33]

The Hawaii-based 6594th Recovery Control Group belonged to the Systems Command's Space Systems Division; it was an experienced unit and a critical element in the Air Force space effort. Its status again became an issue during the Cuban crisis, even though policy discussions during the spring and summer of 1962 had seemingly affirmed the overriding importance of its mission. As early as 23 October the Pacific Air Forces had used the Cuban crisis to justify an imposition of its presumed authority over the 6594th--starting with the recovery unit's equipment. In response to a Pacific Air Forces requirement for two C-130 aircraft the Systems Command presented to Air Force Headquarters its contention that the 6594th should remain under Systems Command authority. On 1 November the Command received from the Pentagon written support of its position: in principle, the 6594th should not be "tasked" by Pacific Air Forces and should remain intact in support of Systems Command programs--even in the event of a general war. Relayed to the Space Systems Division, this Air Force position permitted termination of an agreement already forced upon the 6594th.[34]

When the Russians began to dismantle their offensive weapon sites in Cuba, watchful wariness became the American password. On 2 November the public announcement of Russian withdrawal activities in one respect made it more imperative for the United States to maintain its combat strength poised and ready, to keep pressure on the Caribbean interlopers, and to be prepared for any renewal of the crisis. The posture assumed, then, was a combination of surveillance and readiness which could be maintained comfortably for an unpredictably long time.

At Patrick, therefore, the transient population increased to 135 officers and 889 enlisted men of both services, such protective units as an Army Hawk battery settled into carefully selected positions, and additional measures brought the Patrick communications arrangements into as foolproof a condition as possible.

Other actions reflected the slight relaxation of tension and the parallel possibility of an extended alert period. Systems Command Headquarters on 2 November reduced the actual on-hand Commander's Alert Staff to four individuals during the midnight-to-0800-hours shift; the other staff members checked in and remained available on 10 minutes' notice.[35]

The next day the Strategic Air Command directed the immediate return to the Ballistic Systems Division of the 14 ballistic missile sites on a schedule to be worked out with site activation forces. The object of this return was continuation of the ballistic missile test program and completion of installation and checkout tasks. The move did not represent any noteworthy reduction in strategic strength, for it had already been demonstrated that these weapons could become available for operational use in a very short time.[36]

In reporting its continuing support operations, the Proving Ground Center on 3 November reflected an Air Force guest list of 59 officers and 291 airmen, principally from the Tactical Air Command and the Military Air Transport Service. Expansion of the base hospital capacity from 200 to 500 beds was another measure of Eglin preparedness, and local fishermen were helping to cover the coastal waters around the base.[37]

When the Proving Ground Center surveyed its "radars available for airspace surveillance" on 27 October, it had noted that S. D-8 (Cudjoe Key) of the Eglin Gulf Test Range would be used for

United States Information Agency and Army Security activities. There was some mothballed equipment at the Site, notably an S-band radar and communications gear. In response to Defense Communications Agency inquiries about using this Site as a communications link with Key West, Florida, the Systems Command on 29 October estimated that D-8 could be made operational again in about three days, though the condition of the equipment--"pickled" for over a year--could not be predicted. Round-figure calculations suggested that reactivation and one year's 24-hours-a-day operation could require as much as $129,500.

Also on 3 November the Space Systems Division responded in detail to General Schriever's 25 October message and reported the accomplishment of all necessary steps to secure its Los Angeles installation. If sabotage or infiltration became an unmanageable problem, there were plans to secure Army troops for extra support. Other potential problems included the vulnerability of land-line communications into the Los Angeles complex, a complete dependency upon municipal sources for water, and a minimal emergency power supply. These would be critical items only if the situation deteriorated considerably.[39]

Along with the rest of the Systems Command, the Rome Air Development Center had reviewed its program in the light of crisis requirements. Largely devoted to applied research projects, the Rome effort--as reported on 5 November--afforded very little

opportunity for "crash" acceleration and immediate operational use. (Though Rome's electronics experts had already contributed to American readiness, most notably in modifications of existing radars for missile-detection-and-warning coverage of the Cuban horizon.) Prolongation of the Cuban crisis, however, would enhance the feasibility of bringing several electronic developments to bear. These possibilities included a "quick reaction capability" (QRC) countermeasures item effective against radio-guided missiles launched from Cuba, the use of "planted" beacons in support of air assault operations, and the use of Rome-instrumented experimental aircraft to augment surveillance over the island.[40]

In the aftermath of Systems Command personnel proceeded to "un-cock" the ballistic missile complexes released from the firing line. And on 5 November the Strategic Air Command added seven more missiles (two at Walker and five at Plattsburgh), to be returned on the request of site activation teams for resumption of the installation and checkout process.[41]

On 5 November a total of 27 Air Force medical personnel, brought in for temporary augmentation of the Patrick hospital, returned to their home station. The alert continued, however, and other measures on 6 November improved communications and weather reporting for supported units; the Patrick guest list by this time had increased to 139 officers and 1,007 enlisted men.[42]

In the days which followed, the Systems Command followed the pattern established after these first 15 days of the Cuban crisis--continued support of the alert forces and, insofar as resources permitted, an aggressive assault upon its own systems acquisition program. Periodic intelligence summaries emphasized that the

need for readiness still existed. On 16 November, for example, there were identified four Cuban sites each holding equipment for a small Russian armored regimental combat team. More significant as a critical item was the continued assembly of I1-28 jet bombers on Cuban soil.[43]

Exercises designed to maintain the proficiency of troops in the field added new tasks to the Systems Command support load. Thus "Operation Sunshade I," starting 19 November, saw the arrival at Eglin of 24 C-124 aircraft carrying 1,680 Army men. Successful support of this part of the planned operation tested and validated Proving Ground Center plans specifically designed for just such an emergency movement. Eglin housed the transient force through "saturation billeting," in which closed buildings and even the base gymnasium were pressed into service. The Proving Ground Center also refueled all participating aircraft, provided extra rations, and issued 1,000 blankets.[44]

The gradual, official downgrading of the Cuban alert began at about this time, though it was a piecemeal, extended process.

The long alert period caused other operational concerns with research and development overtones. On 23 November, for example, Air Force Headquarters directed the Tactical Air Command to enlist Eglin help in a range test of napalm bombs which had been loaded for days or weeks on alerted aircraft in southern Florida. The rapid check was to prooftest six firebombs and validate an effective service life for napalm mixed and stored in containers or bombs for relatively long periods.[46]

Also on 23 November, General LeMay conveyed to all Air Force personnel his "appreciation of their splendid professional response." He called the alert performance "exemplary" and commended the "extra effort," the "professional efficiency and spirit of dedication demonstrated at a time when this kind of capability counts most." He concluded:[47]

> Although the danger to peace has been lessened in the Cuban crisis, it has not been eliminated. Throughout the Air Force we must continue to meet our many commitments and to maintain our constant vigilance.

The reversion to a "normal" alert condition proceeded.

By early December the Systems Command was in a position to cast a critical eye back over its performance during the Cuban crisis, and the assessment was reassuring. The Command had met its support requirements promptly; it had brought its unique talents and resources to bear effectively on special technical requirements; and it had also performed its systems acquisition function "without undue interruption or degradation." A prolonged or intensified emergency, to be sure, would have reduced measurably the degree of accomplishment in the latter category; indeed, even the two-week crisis and the relatively slight slippage in some programs imposed measurable additional costs on the Systems Command effort.

There were benefits and lessons to be learned even from the situations where the crisis revealed flaws or deficiencies in con-

or practice. Minor misunderstandings, for example, made imperative a close coordination of the major commands' war plans to insure a clear agreement, in advance, on support requirements.

The fact that the Cuban situation was the "real thing" also made a difference, for reality on occasion dashed cold water upon procedures which had seemed satisfactory in theory or in simulated exercises. In this light, the need for a firmly designated alternate command post headquarters was much more important than previously conceived.

The emergency also instigated a highly profitable review of the entire Air Force limited-war/counterinsurgency effort. One result was an appreciation of the damage done to tactical reconnaissance by earlier funding limitations, giving rise to a drive to upgrade reconnaissance equipment and techniques, especially the means for getting intelligence data from reconnaissance units to decision makers in the shortest possible time. The actual experience with strategic weapons suggested that ballistic missiles in the research and development program might remain in that status somewhat longer in future graduated emergencies, being upgraded into the operational arsenal at a later point prior to actual hostilities.

The HIGH HEELS II/SPADE FORK exercise and the subsequent Cuban crisis pinpointed defects and desirable alterations in the Systems Command's contingency plans. Corrective and remedial measures, taken even while the Cuban situation was running its

critical course, created by early December 1962 a set of Systems Command emergency plans with a high degree of polish from actual experience, plans which were notably more "realistic and responsive" than ever before.[49]

Much more positive and impressive were the achievements which studded the story of the Systems Command's contribution to American efforts during the Cuban crisis. In addition to the specific events outlined in this narrative, the sum total of accomplishments underscored the broad scope of the Command's participation.

In supporting the combat commands, the Systems Command loaned them 18 officers and 150 airmen with experience in communications, security, materiel, operations, and intelligence specialty fields. One operational draft of specialists took all qualified "loadmasters" from the Command's Parachute Test Wing for duty in Florida. (Included were nine airmen, technically loadmasters, who were "reel and pole operators" and critical to Systems Command satellite recovery operations. Protests were unavailing, though the Pentagon did acknowledge the special qualifications of these men. It was 10 November before the first four men were returned to their Systems Command jobs.)

Four bases carried the main burden of Systems Command support for deployed combat forces. The Patrick endeavor encompassed a maximum of 1,255 military personnel, representing 5 Air Force units and an Army contingent. Eglin took care of as many as 1,141 people from tactical, strategic, and transport units, while Edwards accommodated--as noted--a deployed B-47 task force. The fourth Systems Command agency--the Electronic Systems

Division at L. G. Hanscom Field outside Boston--supported some 1,474 people and 39 aircraft of a troop carrier wing called to duty on 28 October from the Reserves and released from active duty on 28 November. In addition, the Division furnished security and refueling services for B-47 aircraft deployed to Boston's Logan International Airport.

Beyond those already noted, the special technical problems attacked and solved by the Systems Command included several accomplishments in electronic engineering. The Pentagon on 25 October identified a singular requirement to which the Systems Command responded by modifying an AN/FPS-35 frequency diversity radar at Thomasville, Alabama, a part of the Semi-Automatic Ground Environment (SAGE) system. Quickly altered, the radar was in 24-hour operation under Air Defense Command control from 27 October to 25 November. Similarly, a contribution to the "Falling Leaves" missile defense warning network was the creation of a modification kit which allowed conversion of AN/MPS-14 height finder radars to a surveillance function. Working from a 24 October requirement, the Systems Command had a modification kit ready for shipment on 2 November.

Not all the efforts were so successful, though negative results did add to the store of technical information. By 27 October, for example, it was clear that it was not feasible to add the Eglin Gulf Test Range's AN/FPS-16 radars to the surveillance network, for they had not performed at all well on test runs against Atlantic Missile Range launches.

Finally, despite all these preoccupations with combat support and special technical requirements, the Systems Command successfully followed through on a major portion of the research,

development, test, and engineering work which comprised the systems acquisition function.

The actions noted in these pages, then, were only an illustrative few of the many constructive accomplishments which featured the Systems Command's response. As these pages indicate, this response went--effectively and commendably--well beyond a bare, minimal fulfillment of the Command's mission requirements. The net result was to add a bright new chapter to the history of Air Force research and development.[50]

NOTES

Excluding standard published reference works, all sources are either reproduced herewith as supporting documents or are in the reference files of the Historical Division, Hq AFSC.

1. The factual data summarized in the following pages derive from standard reference works. Information Please Almanac, Atlas, and Yearbook, 1963 (New York: Simon & Schuster, 1963); I. Macadam, ed., The Annual Register of World Events . . . 1963 (New York: St. Martin's Press, 1963); and Encyclopedia Year Book, 1963 (Grolier, Inc., 1963). See also, Dept of State Publication 7449, "The U.S. Response to Soviet Military Buildup in Cuba," Pres. J. F. Kennedy, 22 Oct 62.

2. President Kennedy himself apparently considered the period 16-28 October as the crucial 13 days of the crisis. See the feature story in the magazine section, The Washington Post, 20 Oct 63, concerning a commemorative silver calendar for Oct 62. The Post on 28 Oct 63 also carried a wire story asserting that the Kennedy-Khrushchev exchange during the Cuban crisis encompassed "at least 40" secret letters and messages.

3. In an address on 29 Nov 60, Gen Schriever said: "I have stated my conviction a number of times recently that America and the Free World are now actively at war with Communism. The kind of hostilities . . . can be called a technological war. . . .

   In the technological war we are striving to conceive new scientific and engineering advances from which we can develop the most useful military systems. . . . The battles in this encounter are fought in research laboratories and military test facilities and its troops are the research scientists and engineers, both military and civilian . . . ." (See ARDC Release 139-60, 29 Nov 60.)

4. Ltr, Lt Gen H. M. Estes, Jr., Vice Comdr AFSC, to Hq USAF, subj: Command Response to Cuban Crisis, 5 Dec 62.

5. Operational planning, another element in this picture, anticipates possible courses of action. On 13 Mar 62 the Air Force Systems Command (AFSC) received a Top Secret Air Force Task Force (AFTF) operations plan (126 OPLAN 314). Among other indicated actions, the Tactical Air Command (TAC) and the Army joined AFSC representatives in a 7-8 Jun support-requirements survey at Patrick AFB. Too, as early as 19 Oct the AFSC had been called on to provide support for the Air Defense Command (ADC). See ltr, Col H. C. Godman, Dir/Ops, DCS/P&M, to Comd Hist, AFSC, subj: Log of SCMO Participation in Current Crisis, 20 Nov 62 [hereinafter cited as SCMO Log].

6. Ibid.; ltr, Hq AFSC to Hq USAF, subj: Submission of Final Report, Exercise Spade Fork, 10 Oct 62; interview by Dr. D. R. McVeigh, Asst Ch, Hist Div, AFSC, with Lt Col T. G. A. Welsh, Ch, War & Emergency Plans Br, Air Ops Div, DCS/M, 12 Nov 63 [hereinafter cited as Welsh interview].

7. There exists ample raw material for a major monograph on the AFSC and its response to the Cuban crisis. A few of the documents bear a Top Secret classification, but the key data have been assembled in quantity--from the Historians of AFSC field organizations and from within Hq AFSC. This abbreviated discussion of the event is dictated by limited resources in time and personnel.

8. Msg, AFSC CP 63-1, Hq AFSC to Hq USAF, 22 Oct 62; SCMO Log, 20 Nov 62.

9.

9. (cont.)

10. See note 8 above.

11. Ltr, Col J. C. Maxwell, CofS, AFSC, to DCS's, et al, AFSC, subj: Staff Actions Resulting from Staff Meeting - 23 October 1962, 23 Oct 62, Doc 24; SCMO Log, 20 Nov 62; Welsh interview, 6 Feb 64.

12. Msg, SCEP-23-10-55, Hq AFSC to ALAFSC, 23 Oct 62; msg, SCE-23-10-56, Hq AFSC to ALAFSC, 23 Oct 62; SCMO Log, 20 Nov 62.

13. Msg, FTOP-23-10-13E, Hq AFFTC to AFSC Comd Post, 23 Oct 62; SCMO Log, 20 Nov 62; History of the Air Force Flight Test Center [hereinafter cited as Hist of AFFTC], Jul-Dec 62, I, 168.

14. Msg, BSLCP-24-10-49, Hq BSD to Hq SAC, 24 Oct 62; ltr, Lt Col G. W. Lutz, Exec, DCS/S, to Comd Hist, AFSC, subj: DCS/Systems Alert Activities, [20-21 Nov 62]; msg, SSQOC-24-10-4, Hq SSD to Hq AFSC, 24 Oct 62; ltr, Gen Estes to Hq USAF, subj: Command Response to Cuban Crisis, 5 Dec 62; SCMO Log, 20 Nov 62.

15. Ltr, Brig Gen B. A. Strickland, Jr., Asst/Bioastronautics, AFSC, to Hq USAF, subj: Flashblindness Protection, 24 Oct 62.

16. Msg, 783/62, Hq USAF to All Maj Comds, 24 Oct 62; ltr, Maj N. E. Zielinski, Comdr's Alert Staff, to Comdr AFSC Comd Post, subj: SCMOC Inputs for Report to USAF on Alert Status, 24 Oct 62; msg, AFMTC-CP-24-3, Hq AFMTC to Hq AFSC, 24 Oct 62; History of the Space Systems Division, Jul-Dec 62, I, 44 [hereinafter cited as Hist of SSD]. Ltr, Lt Col H. M. Dunn, Ch, Transp Div, Dir/Mat, DCS/P&M, to Comd Hist, AFSC, subj: Transportation and the Cuban Crisis, 13 Dec 62; Welsh interview, 6 Feb 64.

17. The AFFTC list of unavailable aircraft counted 5 C-130's, 2 T-38's, and 1 each F-106, T-33, and SH-21. See msg, AFOOP-AL-AM 93123, Ofc of the SAF, to Hq AFSC, et al, 25 Oct 62; msg, AFFTC-CP 63-05, Hq AFFTC to AFSC Comd Post, 25 Oct 62; msg, SWMM 25-10-6, Hq AFSWC to Hq AFSC, 25 Oct 62; ltr, Col C. T. Sevier, Dir/Pers Plans & Tng, DCS/P, to Comd Hist, AFSC, subj: Records of Special Command Activities, 14 Nov 62.

18. Msg, AFSC CP-CG-1, Hq AFSC to ALAFSC, 25 Oct 62.

19. Ltr, Col J. P. Ferrey, Asst DCS/P&M, to DCS's, et al, AFSC, subj: Operation of the Command Post, 26 Oct 62.

20. Ltr, Col H. K. Higginbotham, Dep Dir/Bal Msl Sys, DCS/S, to AFSC Comd Post, subj: Status of ICBM Launch Sites, 26 Oct 62. The breakdown was as follows:

	Opnl Sites		Vandenberg	
	ECC	Opnl	EWO	Opnl
Atlas	12	107	1	6
Titan I	2	53	2	
Minuteman	2	10	2	

see also msg, AFSC CP 63-78, Hq AFSC to Ofc of the SAF, 23 Oct 62. This document indicates that, with SAC concurrence, Operational Suitability Test Facility 1 at Vandenberg continued to follow its test schedule.

21. Msg, MDOP-25-10-5, Hq AFMDC to Hq AFSC, 26 Oct 62; msg, AFSC 93234, Hq USAF to Hq SAC/Hq AFSC, 26 Oct 62; msg, PCO-25-10-25, Hq APGC to Hq AFSC, 26 Oct 62; ltr, Lt Col Lutz to Comd Hist, [20-21 Nov 62].

22. Ltr, Lt Col Lutz to Comd Hist, [20-21 Nov 62]; msg, AFSC CP 63-78, Hq AFSC to Ofc of the SAF, 26 Oct 62; ltr, Col M. E. Kay, Dir/Elect Sys, to DCS/S, subj: Status of AFSC Sensors in Support of Cuban Crisis, 29 Nov 62; msg, ADOOP-ES 2942, Hq ADC to CofS USAF, 30 Oct 62.

23. Hist of AFFTC, Jul-Dec 62, I, 168f.

24. Msg, DIAAP-3 93454, DIA to DCS/FT AFSC, 27 Oct 62. See also msg, AFSC CP 63-115, Hq AFSC to ALAFSC, 27 Oct 62; this AFSC intelligence summary further substantiated the conclusion that this was no spur-of-the-moment Russian plan. Soviet submarines sighted in the Atlantic and Caribbean areas would have had to leave their known fleet stations "well in advance of the current crisis."

25. Msg, MTL-27-10-17, Hq AFMTC to Hq AFSC, 27 Oct 62.

26. Msg, BSLCP-26-10-39, Hq BSD to Hq AFSC, 27 Oct 62; msg, BSQ 27-10-296, Hq BSD to Hq AFSC, 27 Oct 62.

27. Ltr, Lt Col Lutz to Comd Hist, [20-21 Nov 62]; msg, AFSC CP 63-131, Hq AFSC to CofS USAF, 28 Oct 62; ltr, Col H. C.

27. (cont.) Godman, Sr Controller, to CofS AFSC, subj: Daily Aircraft Status Report, 27 Oct 62; msg, ASOR-29-10-43, Hq ASD to Hq AFSC, 29 Oct 62; ltr, Lt Col W. E. Dunn, Ch, Acft Allocations, Dir/Ops, DCS/P&M, to Comd Hist, AFSC, subj: Summary of Actions in Support of Cuban Crisis, 19 Nov 62.

28. Msg, AFMTC CP-29-4, Hq AFMTC to AFSC Comd Post, 29 Oct 62; msg, AFFTC-CP-63-21, Hq AFFTC to Hq AFSC, 29 Oct 62; msg, AFSC CP 63-158, Hq AFSC to CofS USAF, 29 Oct 62; SCMO Log, 20 Nov 62; ltr, Gen Estes to Hq USAF, 5 Dec 62.

If there was a note of complacency in the Edwards report, it stemmed from possession of a "borax mine fallout shelter" 18 miles away. Inside this mine were 150 miles of tunnels and--over a mile from the entrance--an AFFTC command post stocked with water, hospital supplies, and food. See Hist of AFFTC, Jul-Dec 62, I, 170f.

29. Ltr, Col T. T. Omohundro, Dir/Aero Sys, to Alert Staff, AFSC, subj: (Secret) Quick Check Coverage of Cuba, 31 Oct 62.

30. Msg, AFSC CP-SCMO-63-172, Hq AFSC to CofS USAF, 30 Oct 62; ltr, Lt Col Lutz to Comd Hist, [20-21 Nov 62]; SCMO Log, 20 Nov 62.

31. Msg, AFMTC-CP-28-4, Hq AFMTC to AFSC Comd Post, 31 Oct 62; msg, AFSC CP-63-185, Hq AFSC to CofS USAF, 31 Oct 62; msg, APEX SITREP 01, Hq APGC to Hq AFSC, 31 Oct 62; msg, AFSC CP 63-110, Hq AFSC to CofS USAF, 27 Oct 62; msg, SCE-1-11-1, Hq AFSC to ALAFSC, 1 Nov 62.

32. Msg, SCE-1-11-1, Hq AFSC to ALAFSC, 1 Nov 62; SCMO Log, 20 Nov 62.

33. Msg, AFMTC-CP-01-01, Hq AFMTC to AFSC Comd Post, 1 Nov 62; msg, AFSC CP 63-197, Hq AFSC to CofS USAF, 1 Nov 62; msg, RWVA 1-11-3, Hq WCMR to Hq AFSC, 1 Nov 62.

34. Msg, AFSC CP 63-212, Hq AFSC to CofS USAF, 3 Nov 62; SCMO Log, 20 Nov 62; Welsh interview, 6 Feb 64.

35. Msg, AFMTC-CP-02-01, Hq AFMTC to AFSC Comd Post, 2 Nov 62; ltr, Col H. C. Godman, Sr Controller, to Comdr's Alert Staff, subj: Manning of the CAS 2400 hours - 0800 hour shift, 2 Nov 62; SCMO Log, 20 Nov 62.

36. Msg, DM 8788, Hq SAC to Hq AFSC, et al, 3 Nov 62.

37. Msg, APEX SITREP 05, Hq APGC to AFSC Comd Post, 3 Nov 62.

38. Ibid.; msg, PGOX 27-10-38, Hq APGC to AFSC Comd Post, 27 Oct 62; msg, AFSC CP 63-158, Hq AFSC to CofS USAF, 29 Oct 62; msg, ODC 3-11-17, Hq USAF to Hq AFSC, 3 Nov 62.

APGC officials said it would cost as much as $5,000 just to reactivate Site D-8, 24-hour operation for one year would require another $72,000, utilities during that year would cost $2,500, and as much as $50,000 might go for supplies.

39. Msg, SSG-3-11-1, Hq SSD to Hq AFSC, 3 Nov 62.

40. Msg, RAOP 5-11-1, Hq RADC to Hq AFSC, 5 Nov 62.

41. Msg, BSLC-4-11-90, Hq BSD to AFSC Comd Post, 5 Nov 62; msg, DM 8828, Hq SAC to Hq AFSC, 5 Nov 62.

42. Msg, AFMTC-CP-06-01, Hq AFMTC to AFSC Comd Post, 6 Nov 62.

43. Msg, AFSC CP SCF 63-254, Hq AFSC to ALAFSC, 16 Nov 62.

44. Msg, APEX SITREP 22, Hq APGC to Hq AFSC, 20 Nov 62; msg, APEX SITREP 23, Hq APGC to Hq AFSC, 26 Nov 62.

45. Msg, AFSC CP 63-265, Hq AFSC to ALAFSC, 22 Nov 62; msg, AFSC CP 63-263, Hq AFSC to Hq BSD, 21 Nov 62; msg, AFSC CP 63-267, Hq AFSC to ALAFSC, 23 Nov 62.

46. Msg, AFOOP TA PC 97322, Hq USAF to Hq TAC, 23 Nov 62.

47. Msg, AFCCS 1885/62, Gen C. E. LeMay, CofS USAF, to Comdr AFSC, et al, 23 Nov 62.

48. Hist of SSD, Jul-Dec 62, I, 45; Hist of AFFTC, Jul-Dec 62, I, 168.

49. Ltr, Brig Gen W. E. Leonhard, DCS/P&M, to Comd Hist, AFSC, subj: Command Response to Cuban Crisis, 4 Dec 62; ltr, Gen Estes to Hq USAF, 5 Dec 62.

Estimates made during the crisis illustrated the extra cost connected with even a slight disarrangement of program schedules. Return of a modified radar site to its original configuration would require $35,000 if done in two months; if accelerated to a one-month rehabilitation, the cost would be $70,000. Similarly, acceleration of Titan I deliveries during a 30-day period would have added $5,000,000 to the ballistic missile program cost and would also have forced a slippage of over 90 days on the Titan II program. (See ltr, S. A. McKay, Asst DCS/C, to Comd Hist, subj: Record of Activities During Cuban Crisis, 17 Dec 62; see also ltr, Lt Col Lutz to Comd Hist, [20-21 Nov 62].)

50. Ltr, Gen Estes to Hq USAF, 5 Dec 62; SCMO Log, 20 Nov 62; ltr, Col Sevier to Comd Hist, 14 Nov 62; ltr, Mr. McKay to Comd Hist, 17 Dec 62; ltr, Lt Col Lutz to Comd Hist, subj: DCS/Systems Alert Activities, 30 Nov 62.